IN THE CLAIMS

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

Add the following new claims:

15. (Original) A heavy duty flame propagation engine having at least one combustion chamber having at least one intake port through which a mixture of air and fuel is introduced into said combustion chamber, said engine comprising:

an intake manifold in controlled fluid communication with a source of combustion air and said combustion chamber;

a means for controllably introducing fuel through an intake port disposed between said intake manifold and said combustion chamber;

an exhaust system in controlled fluid communication with said combustion chamber;

a three-way catalyst disposed in said exhaust system;

a means for controlling the air-fuel mixture and provide a substantially stoichiometric mixture of air and fuel into said combustion chamber of the engine;

a includes a plurality of combustion chambers and a means for controllably deactivating selected ones of said combustion chambers;

at least one intake valve adapted to control the flow of the mixture of air and fuel provided to said combustion chamber, at least one exhaust valve adapted to control the flow of said exhaust gases from said combustion chamber into said exhaust system, and a means for varying the operation of said intake valve and said exhaust valve; and

wherein said engine includes a pilot fluid injector in direct communication with said

combustion chamber and a means for controllably injecting fuel in the combustion chamber in advance of a primary injection of fuel.

16. (Original) A heavy duty flame propagation engine having at least one combustion chamber having at least one intake port through which a mixture of air and fuel is introduced into said combustion chamber, said engine comprising:

an intake manifold in controlled fluid communication with a source of combustion air and said combustion chamber;

a means for controllably introducing fuel through an intake port disposed between said intake manifold and said combustion chamber;

an exhaust system in controlled fluid communication with said combustion chamber;

a three-way catalyst disposed in said exhaust system;

a means for controlling the air-fuel mixture and provide a substantially stoichiometric mixture of air and fuel into said combustion chamber of the engine;

a includes a plurality of combustion chambers and a means for controllably deactivating selected ones of said combustion chambers;

at least one intake valve adapted to control the flow of the mixture of air and fuel provided to said combustion chamber, at least one exhaust valve adapted to control the flow of said exhaust gases from said combustion chamber into said exhaust system, and a means for varying the operation of said intake valve and said exhaust valve; and

wherein said fuel injector is adapted to inject fuel into said combustion chamber at selected multiple times during each engine cycle.